What Is Claimed Is:

1.   An automated method of performing inline invalidation of cached data, the method comprising:

5   receiving at a data server a data request initiated by a requestor;

identifying cached data to be invalidated before the requested data can be served to the requestor;

generating a response to the data request, wherein the response includes instructions to invalidate said cached data;

10   transmitting the response toward the requestor; and

at one or more caches:

executing said instructions; and

forwarding the response toward the requestor.

15   2.   The method of claim 1, wherein said forwarding is performed only after said executing.

3.   The method of claim 1, wherein the cached data to be invalidated include data modified in the request.

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4.   The method of claim 1, wherein the cached data to be invalidated include stale versions of data requested in the data request.

5.   The method of claim 1, further comprising:

25   at a final cache, removing said instructions before serving the response to the requestor.

6.   The method of claim 1, wherein said generating comprises

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inserting in the response an ESI (Edge Side Includes) token configured to identify said cached data.

7.   The method of claim 1, wherein no invalidation message
5   configured to invalidate the cached data, other than the response, is forwarded · from the data server.

8.   The method of claim 1, wherein said receiving comprises:

receiving the data request at a first cache, wherein the data request results
10   in a cache miss at the first cache; and

forwarding the data request through one or more additional caches toward the data server, wherein the data request results in cache misses at each of the one or more additional caches.

15   9.   The method of claim 8, wherein said transmitting comprises:

forwarding the response through the one or more additional caches toward the requestor.

10.   The method of claim 9, wherein said executing comprises:
20   at each of the one or more additional caches:

invalidating said cached data; and

selectively caching data included in the response.

11.   A computer readable medium storing instructions that, when
25   executed by a computer, cause the computer to perform a method of performing inline invalidation of cached data, the method comprising:

receiving at a data server a data request initiated by a requestor;

identifying cached data to be invalidated before the requested data can be

served to the requestor;

generating a response to the data request, wherein the response includes instructions to invalidate said cached data;

transmitting the response toward the requestor; and

5   at each of one or more caches:

executing said instructions; and

forwarding the response toward the requestor.

12.   A computer-implemented method of communicating a side effect

10   of processing a data request to one or more caches, the method comprising:

at a data server, receiving a data request from a requestor through a set of caches;

identifying a side effect to be implemented on one or more of the caches;

generating a response to the data request;

15   identifying the side effect in the response;

, serving the response toward the requestor through the set of caches; and

at each of the one or more caches:

implementing the side effect; and

forwarding the response toward the requestor.

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13.   The method of claim 12, further comprising:

at a final cache coupled to the requestor, modifying the response to remove identification of the side effect before serving the response to the requestor.

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14.   The method of claim 12, wherein said implementing the side effect comprises implementing the side effect prior to caching data included in the response.

15.   The method of claim 12, wherein said implementing the side effect comprises implementing the side effect after said forwarding.

5   16.   The method of claim 15, wherein said implementing the side effect comprises implementing the side effect before a specified event.

17.   The method of claim 12, wherein said identifying the side effect comprises inserting in the response an ESI (Edge Side Include) token configured

10   to identify the side effect.

18.   The method of claim 12, wherein the side effect comprises invalidation of one or more data objects cached in a subset of the set of caches.

15   19.   The method of claim 12, wherein the side effect comprises propagation of cache configuration data.

20.   The method of claim 12, wherein the side effect comprises a password.

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21.   The method of claim 12, wherein the side effect comprises an update to a cache program.

22.   The method of claim 12, wherein the side effect comprises a

25   replacement cache program.

23.   A computer readable medium storing instructions that, when executed by a computer, cause the computer to perform a method of

communicating a side effect of processing a data request, the method comprising:

at a data server, receiving a data request from a requestor through a set of caches;

during processing of the data request at the data server, identifying a side

5   effect to be implemented on one or more of the caches;

generating a response to the data request;

identifying the side effect in the response;

serving the response toward the requestor through the set of caches; and

at each of the one or more caches:

10   implementing the side effect; and

forwarding the response toward the requestor.

24.   An apparatus for communicating a side effect of a data request

from a server, the apparatus comprising:

15   a receiving module configured to receive, via one or more caches, a data

request initiated by a requestor;

a processing module configured to process the data request and identify a

side effect of processing the data request;

an assembly module configured to assemble a response to the data request,

20   wherein the response is configured to convey notification of the side effect to the

one or more caches; and

a server configured to serve the response toward the requestor;

wherein, at each of the one or more caches, the side effect is implemented

and the response is forwarded toward the requestor.

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25.   The apparatus of claim 24, wherein the side effect comprises the

invalidation of data cached on a subset of the one or more caches.

26.   The apparatus of claim 24, wherein the side effect comprises propagation of cache configuration data.

27.   The apparatus of claim 24, wherein the side effect comprises a

5   password.

28.   The apparatus of claim 24, wherein the side effect comprises an update to a cache program.

10   29.   The apparatus of claim 24, wherein the side effect comprises a replacement cache program.

30.   The apparatus of claim 24, wherein implementing the side effect at a cache comprises implementing the side effect after forwarding the response

15   toward the requestor.

31.   The apparatus of claim 30, wherein implementing the side effect at a cache comprises implementing the side effect before a specified event.

20   32.   A network configured to apply inline invalidation of cached data, comprising:

    a data server configured to:

        respond to data requests; and

        in a first response to a first data request and not in any

25   communication other than the first response, identify cached data to be

        invalidated; and

        one or more caches configured to cache data for satisfying the data

    requests, including a first cache;

wherein the first cache is configured to:

    receive the first response;

    invalidate the identified cached data; and

    forward the first response.

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33.   The network of claim 32, wherein the first cache is configured to forward the first response only after invalidating the identified cached data.

34.   The network of claim 32, wherein the first cache is configured to

10   forward the first response before invalidating the identified cached data.